

A detailed 3D cutaway diagram of the sPHENIX detector, showing its complex internal structure with various colored components (red, green, blue, yellow, orange) and a central beam pipe. The detector is mounted on a large, multi-level support structure.

GitHub Repository for sPHENIX

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Check list to get started

1. Register at <https://github.com/>
2. Send me jhuang@bnl.gov your user account name
3. Send your RCF SSH public key to GitHub:
<https://help.github.com/articles/generating-ssh-keys/#step-4-add-your-ssh-key-to-your-account>
4. Try it out (also in Chris' tutorial):
 - Tutorial:
> git clone [git@github.com:sPHENIX-Collaboration/tutorials.git](https://github.com/sPHENIX-Collaboration/tutorials.git)
 - sPHENIX main macro:
> git clone [git@github.com:sPHENIX-Collaboration/macros.git](https://github.com/sPHENIX-Collaboration/macros.git)
 - Analysis repository (**editable**, welcome to add your folder):
> git clone [git@github.com:sPHENIX-Collaboration/analysis.git](https://github.com/sPHENIX-Collaboration/analysis.git)

sPHENIX software on GitHub

- ▶ GitHub is largest online code host in the world.
- ▶ Chris moved sPHENIX software to GitHub: <https://github.com/sPHENIX-Collaboration>
- ▶ Three teams established with repository write privilege:
 - **Collaborators** : write the analysis modules, propose change to core software, **everyone invited**
 - **coresoftware-developpors** : edit or approve pull request for nightly-built packages.
 - **Owner**: administrative works (add member, etc.)

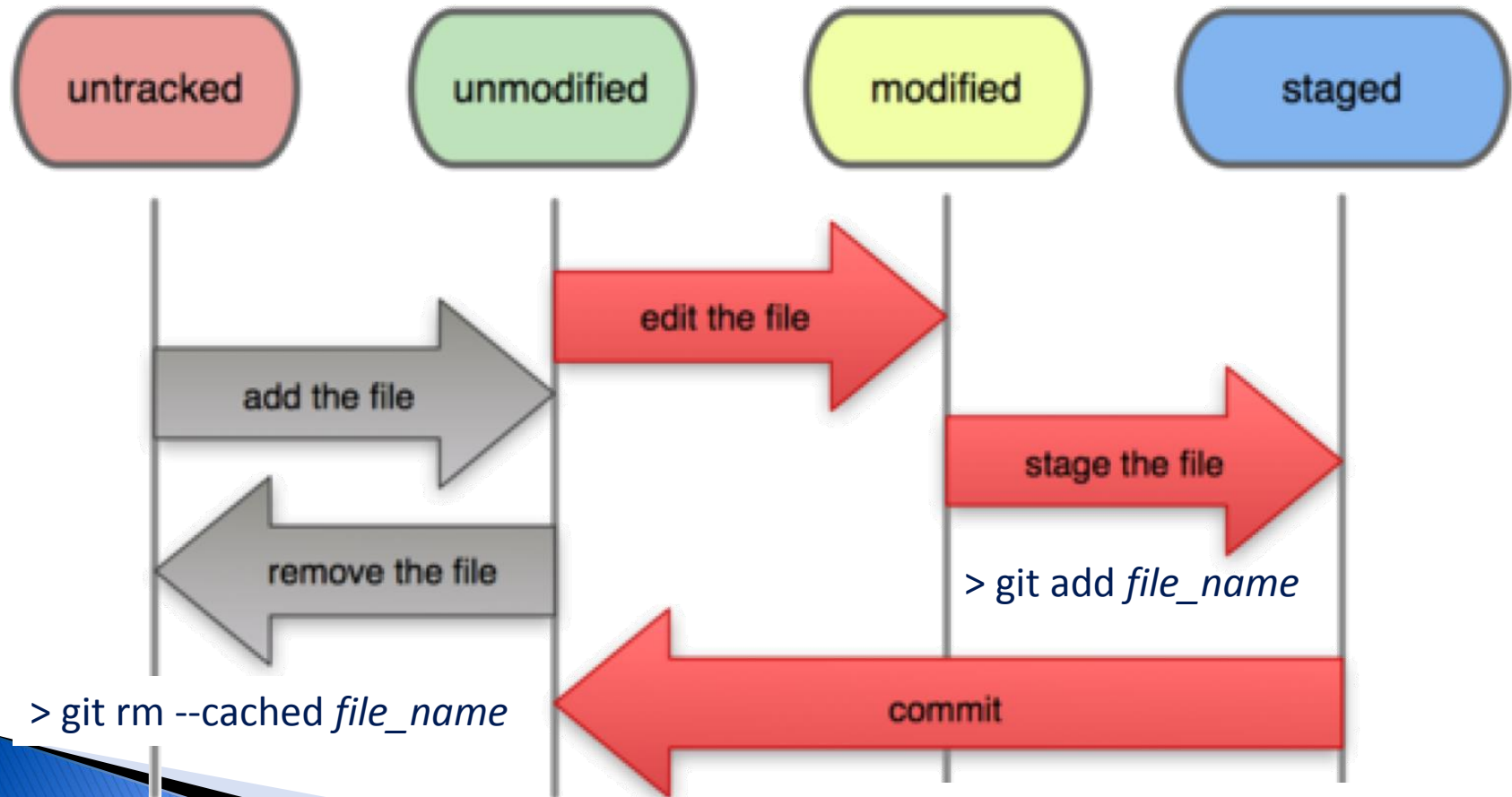
Repository	Purpose	PHENIX CVS equ.	Write permission team
coresoftware	Nightly build core software. Most strict quality control	offline/package offline/framework simulation/g4simulation	coresoftware-developpors
macros	Standard macro to run production	simulation/g4simulation/macros offline/data_production	coresoftware-developpors
analysis	Analysis modules	offline/analysis offline/AnalysisTrain/	Collaborators
calibrations	Tmp. place for calibrations	Database server	coresoftware-developpors
utilities	Maintenance toolkit on RCF	utils	coresoftware-developpors
tutorials	Official tutorial and test	N/A	coresoftware-developpors

Collaborative editing on GitHub

- ▶ GitHub support two types of collaborative editing, we would use both for different repository
- ▶ For the analysis repository, see “Example work flow 2”
 - Every collaborator we free to add and edit
 - Example result: <https://github.com/sPHENIX-Collaboration/analysis/commit/ace66a7c5a5981c2300ee87d8a3ba0d2eb96d684>
- ▶ For nightly-built software (e.g. coresoftware repository)
See “Example work flow 3”
 - Collaborators can fork the repository -> make modification -> send a pull request. Examples results:
 - <https://github.com/sPHENIX-Collaboration/coresoftware/pull/3>
 - <https://github.com/sPHENIX-Collaboration/coresoftware/pull/7>
 - Similar flow to CMS software management (<https://github.com/cms-sw/cmssw>)
 - Software package managers can directly update the code:
 - Example result : <https://github.com/sPHENIX-Collaboration/coresoftware/commit/680f014c35751db31a111fd99039e8690d94d2f5>

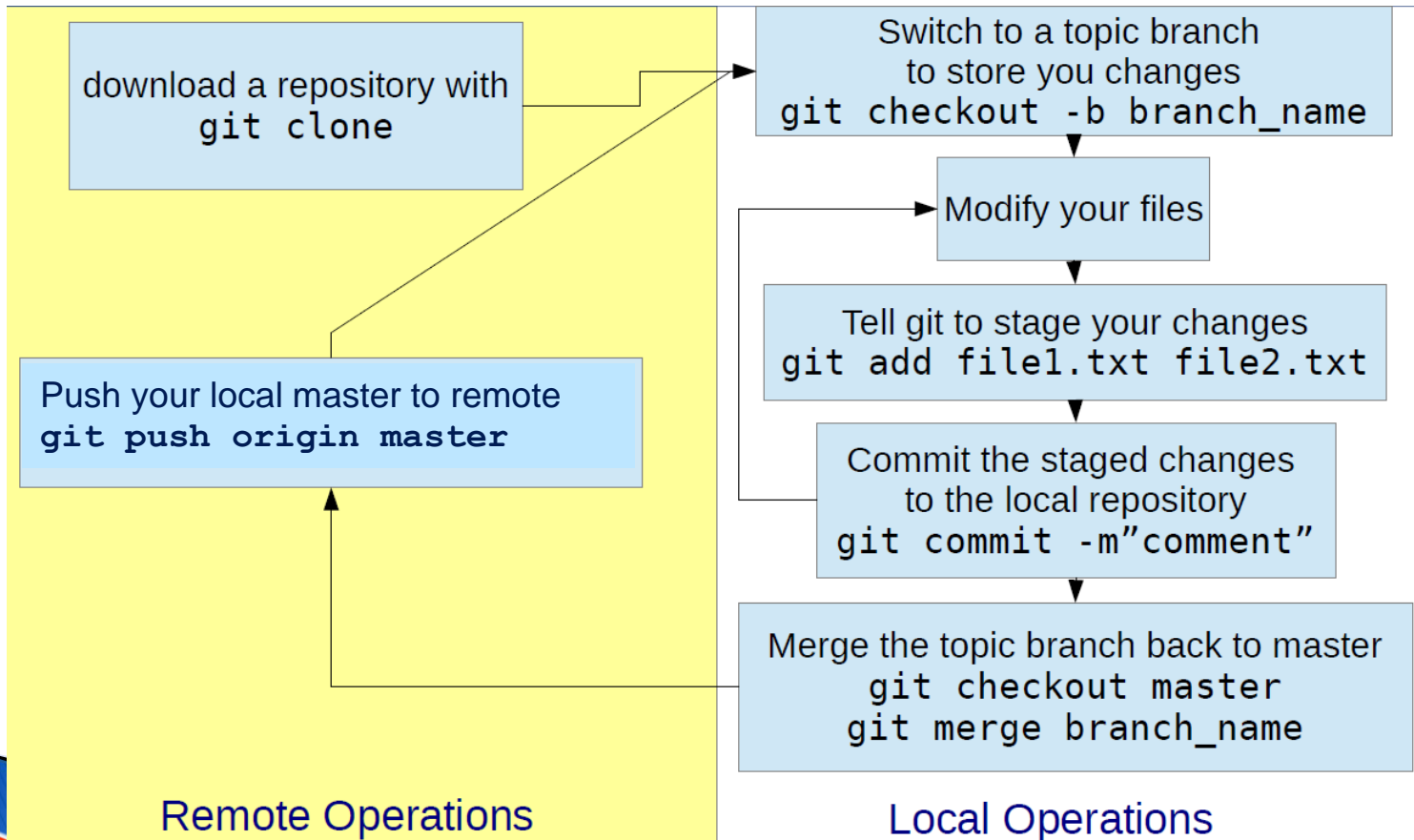
Example work flow 1, local file operation

Read More: <https://git-scm.com/docs/gittutorial>



Example work flow 2, collaborative editing analysis repository

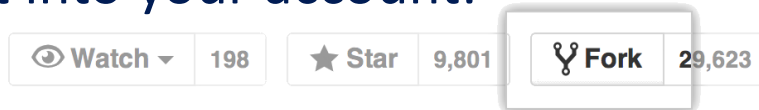
```
> git clone git@github.com:sPHENIX-Collaboration/analysis.git  
> cd analysis
```



Example work flow 3, Fork & pull request

GitHub coresoftware repository 1/2

- ▶ Fork the sPHENIX/coresoftware in your GitHub account
 - Login to your GitHub account
 - Go to <https://github.com/sPHENIX-Collaboration/coresoftware>
 - Fork it into your account:

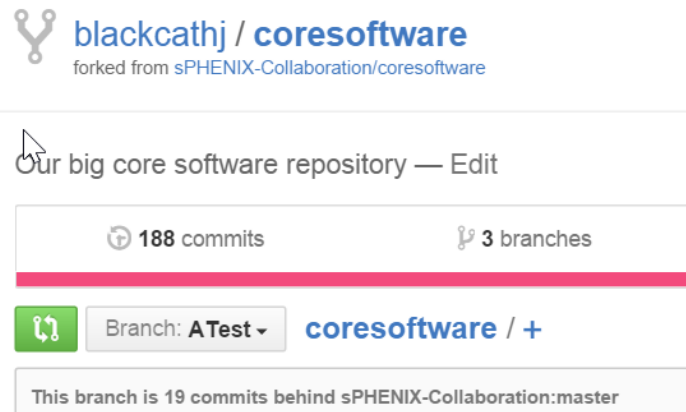


- ▶ Setup your fork and sync your fork to sPHENIX
 - `>git clone git@github.com:blackcathj/coresoftware.git`
 - `>git remote add upstream git@github.com:sPHENIX-Collaboration/coresoftware.git`
 - `> git remote -v` # check the setup
 - `> git fetch upstream` # download update from sPHENIX main
 - `> git merge upstream/master` # merge updates to your local
 - `> git push origin master` # upload

Example work flow 3, Fork & pull request

GitHub coresoftware repository 2/2

- ▶ Make modification and upload changes to your fork
 - `> git push origin master`
- ▶ Then submit a pull request to suggest your change to sPHENIX/coresoftware
 - Goto your GitHub account, select your fork of coresoftware
 - Submit a pull request:



- ▶ Development team will test, comment and approve the change following the pull request